

**REMARKS**

The Office Action mailed August 18, 2006, has been received and reviewed. Claims 1 and 3 through 28 are currently pending in the application. Claims 1, 4 through 6, 11, 12, 14 through 16, 22, 23, and 28 stand rejected. Claims 3, 7 through 10, 13, 17 through 21, and 24 through 27 have been objected to as being dependent upon rejected base claims, but the indication of allowable subject matter in such claims is noted with appreciation. Applicant has amended claims 1, 11, 13, and 22. Applicant respectfully requests reconsideration of the application as amended herein.

**35 U.S.C. § 102(e) Anticipation Rejections****Anticipation Rejection Based on U.S. Patent No. 6,773,938 to Wood et al.**

Claims 1, 4 through 6, 11, 12, 14 through 16, 22, 23, and 28 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Wood et al. (U.S. Patent No. 6,773,938). Applicant respectfully traverses this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicant respectfully asserts that independent claim 1 is not anticipated by Wood et al. because Wood et al. does not expressly or inherently describe “ablating one or more depressions *in and along a surface* of the semiconductor substrate to define at least one electrical pathway *extending along the surface*,” as recited in independent claim 1 as currently amended.

Wood et al. describes a microelectronic component test system 10 that includes a probe card 20. *Wood et al.*, column 3, lines 10-14; FIG. 1. With reference to FIGS. 4-16, Wood et al. describes a method of manufacturing the probe card 20. *Id.*, column 3, lines 49-50. A substrate 200 is provided and blind vias or holes are formed in the substrate. *Id.*, column 3, lines 50-51, 63; FIG. 5. The blind vias or holes “*extend inwardly* from the front face 202 of the substrate to a depth A from the front face 202.” *Id.*, column 3, lines 64-66; FIG. 5. The blind vias or holes 210

may be formed in a variety of ways, including being laser machined via laser ablation. *Id.*, column 4, lines 7-8, 19-20. Once the blind vias or holes 210 are formed an intermediate layer 215 may be deposited on the substrate 200 to cover the front face 202 of the substrate and an internal surface of each of the holes 210. *Id.*, column 4, lines 41-47; FIG. 6. A conductive material is then deposited over the intermediate layer 215 and may substantially fill each of the holes 210. *Id.*, column 5, lines 15-19; FIG. 7.

Wood et al. merely describes ablating holes 210 in a surface of the substrate 200 that “*extend inwardly*” from the surface 202 or in other words transverse to the surface 202. *Id.*, column 3, lines 64-65. The Examiner appears to assert at Page 3 of the outstanding Office Action that Wood et al. shows depressions that extend along the surface 202 in FIG. 5. Applicants respectfully disagree and assert that FIG. 5 in Wood et al. clearly illustrates holes 210 that “*extend inwardly*” or transverse to surface 202 and toward surface 204. Such holes 210 clearly not formed along the surface 202, nor do they extend along the surface 202. Applicants additionally note that the Examiner has previously acknowledged at Page 2 of the Office Action mailed March 9, 2006 that “Wood et al. do not specifically disclose that the depressions extend along the surface.” As Wood et al. does not expressly or inherently describe each and every element recited in independent claim 1 as currently amended, Applicant asserts that independent claim 1 is not anticipated by Wood et al. and respectfully requests that the Examiner withdraw the rejection of independent claim 1 under 35 U.S.C. §102(e).

Applicant additionally asserts that each of the dependent claims 4 through 6 is allowable at least because each depends directly or indirectly from independent claim 1, which is allowable. Therefore, Applicant asserts that each of the dependent claims 4 through 6 is not anticipated by Wood et al. and respectfully requests that the Examiner withdraw the rejections of dependent claims 4 through 6 under 35 U.S.C. §102(e).

Applicant asserts that independent claim 11 is not anticipated by Wood et al. because Wood et al. does not expressly or inherently describe “substantially simultaneously ablating at least one depression in *and along a surface* of the semiconductor substrate to define a path for at least one conductive element in the form of an elongated trace *extending along the surface of the semiconductor substrate*, and ablating at least another depression in and transverse to the surface

of the semiconductor substrate comprising a via extending into the semiconductor substrate.

As previously discussed in relation to claim 1, Wood et al. merely describes ablating a hole that *extends inwardly or transverse* to a surface of a substrate, but does not expressly or inherently describe ablating a depression in *and along a surface* of a semiconductor substrate to define a path for at least one conductive element in the form of an elongated trace *extending along the surface*.

Furthermore, Wood et al. does not expressly or inherently describe “*substantially simultaneously ablating* at least one depression in and along a surface of the semiconductor substrate to define a path for at least one conductive element in the form of an elongated trace extending along the surface of the semiconductor substrate, and ablating at least another depression in and transverse to the surface of the semiconductor substrate comprising a via extending into the semiconductor substrate,” as recited by independent claim 11 as currently amended. Wood et al. does describe forming holes 210 that extend transverse to the semiconductor substrate. *Wood et al.*, column 3, lines 63-66. However, Wood et al. does not describe forming the vias 210 substantially simultaneously with other depressions or particularly ablating them substantially simultaneously with “at least one depression in *and along a surface* of the semiconductor substrate to define a path for at least one conductive element in the form of an elongated trace *extending along the surface of the semiconductor substrate*,” as recited in independent claim 11 as currently amended.

As Wood et al. does not expressly or inherently describe each and every element recited in independent claim 11 as currently amended, Applicant asserts that claim 11 is not anticipated by Wood et al. and respectfully requests that the Examiner withdraw the rejection of independent claim 11 under 35 U.S.C. § 102(e).

Applicant additionally asserts that each of the dependent claims 12 and 14 through 16 is allowable at least because each depends directly or indirectly from independent claim 11, which is allowable. Therefore, Applicant asserts that each of the dependent claims 12 and 14 through 16 is not anticipated by Wood et al. and respectfully requests that the Examiner withdraw the rejections of dependent claims 12 and 14 through 16 under 35 U.S.C. §102(e).

Applicant respectfully asserts that independent claim 22 is not anticipated by Wood et al.

because Wood et al. does not expressly or inherently describe “ablating one or more depressions *in a surface of [a] sidewall* of [a] semiconductor substrate,” as recited in independent claim 22.

Applicant respectfully asserts that those of ordinary skill in the art know that semiconductor substrates are substantially planar and include two major surfaces, i.e., an active surface and a backside surface, with sidewalls that extend between the two major surfaces, typically in a direction that is normal to the major surfaces. As previously discussed in relation to claim 1, Wood et al. describes ablating a hole that extends inwardly from surface 202 of a substrate 200. *Wood et al.*, column 3, lines 63-66. Furthermore, Wood et al. teaches that the substrate may comprise an “undoped silicon wafer.” *Id.*, column 3, lines 58-60. As clearly shown in FIGS. 4 through 16, the holes 210 are formed, however, in one of the major surfaces (the “front face 202” and the “back face 204”) of the substrate 200. *Id.*, column 3, lines 51-53. Wood et al. clearly does not expressly or inherently describe forming the holes 210 *in sidewalls* of the substrate 200, which are only shown in FIG. 1 and not in any of FIGS. 4 through 16.

As Wood et al. does not expressly or inherently describe each and every element recited in independent claim 22, Applicant asserts that claim 22 is not anticipated by Wood et al. and respectfully requests that the Examiner withdraw the rejection of independent claim 22 under 35 U.S.C. § 102(e).

Applicant additionally asserts that each of dependent claims 23 and 28 is allowable at least because each depends directly or indirectly from independent claim 22, which is allowable. Therefore, Applicant asserts that the dependent claims 23 and 28 are not anticipated by Wood et al. and respectfully requests that the Examiner withdraw the rejection of dependent claims 23 and 28 under 35 U.S.C. § 102(e).

Regarding dependent claim 23, Applicant additionally asserts that Wood et al. does not expressly or inherently describe “depositing an electrically conductive material *over the surface of [a] sidewall* of the semiconductor substrate,” as recited in dependent claim 23. Wood et al. describes depositing conductive metal over a front face 202 of a substrate 200, which clearly is not a sidewall as previously discussed in relation to claim 22. Applicant respectfully asserts that dependent claim 23 is not anticipated by Wood et al., and requests that the Examiner withdraw the rejection of dependent claim 23 under 35 U.S.C. § 102(e) for this additional reason.

**Objections to Claims/Allowable Subject Matter**

Claims 3, 7 through 10, 13, 17 through 21, and 24 through 27 stand objected to as being dependent upon rejected base claims, but are indicated to contain allowable subject matter and would be allowable if placed in appropriate independent form. Each of the claims 3, 7 through 10, 17 through 21, and 24 through 27 depends either directly or indirectly from one of the independent claims 1, 11, or 22. Applicant respectfully asserts that each of the independent claims 1, 11, and 22 is allowable at least for the reasons previously discussed. Therefore, the Applicant asserts that each of the claims 3, 7 through 10, 13, 17 through 21, and 24 through 27 depends from an allowable base claim, and request that the Examiner withdraw the objection to claims 3, 7 through 10, 13, 17 through 21, and 24 through 27.

**CONCLUSION**

Claims 1 and 3 through 28 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "J. Jeffrey Gunn", followed by a long horizontal flourish.

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